IDAHO

FISH & GAME DEPARTMENT

JOSEPH C. GREENLEY, DIRECTOR

FEDERAL AID IN FISH AND WILDLIFE RESTORATION JOB PROGRESS REPORT Project F-49-R-10



SALMON AND STEELHEAD INVESTIGATIONS

Job No. 1-a. Salmon Spawning Ground Surveys

Period Covered: March 1, 1971 - February 29, 1972

By

Terry Holubetz, Regional Fishery Biologist Steven A. Hoss, Fishery Biologist Thomas L. Welsh, Regional Fishery Biologist Donald Corley, Regional Fishery Biologist

Boise, Idaho

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JOB PROGRESS REPORT RESEARCH PROJECT STATEMENT

State ofIdaho	Name:	SALMON AND STEELHEAD
Project No. F-49-R-10		INVESTIGATIONS
· · · · · · · · · · · · · · · · · · ·	Title:	Salmon Spawning Ground Surveys
Period Covered: March 1, 1971 to February 29,	1972	

ABSTRACT:

Each year regional fishery biologists survey major chinook salmon spawning areas in their respective regions to count the number of redds constructed in trend count areas and to examine, measure, and sex carcasses. The data are made available for trend analysis and correlation with dam and weir counts in management reports.

Redd counts and sex-length data for 1971 are presented in a series of attached tables and maps.

Submitted by:

Terry Holubetz, Regional Fishery Biologist Steven A. Hoss, Fishery Biologist Thomas L, Welsh, Regional Fishery Biologist Donald Corley, Regional Fishery Biologist

RECOMMENDATIONS:

The redd count surveys and sex-length data collections should be continued to provide management data.

OBJECTIVES:

To count chinook salmon redds in established trend areas.

To measure and sex representative samples of spawned-out chinook carcasses.

TECHNIQUES USED:

Redd counts are made from low flying, fixed-wing aircraft, helicopter, or on foot depending on which technique is best suited for a stream. Redds are counted when preliminary observations indicate that spawning is over and before redds become obscure from algae and silt.

Carcass surveys should be made three times during the extent of post-spawning mortalities to eliminate bias in sex ratios noted early and late in the season.

The redd counts on the lower section of the North Fork of the Salmon River were discontinued and a new area above Gibbonsville added in 1969. The counts for 1969, 1970 and 1971 are not directly comparable to those from earlier years (comparable counts may be obtained from maps).

Chinook redd counts are included for selected tributaries of the Clearwater River in which reintroduction efforts have created sizable runs.

FINDINGS:

Refer to attached Tables and Maps.

Table 1. Salmon River chinook salmon redd counts in stream sections used by early and late spawning (spring and summer) chinook - Idaho, 1971.

Streams		Number	of Redds	Counted	in:		
·	1966	1967	1968	1969	1970	5 Yr. Ave.	1971
Spring Chinook		<u> </u>					
Alturas Lake Cr.	119	74	110	41	68	82	50
Upper Salmon River	699	943	637	313	432	605	619
Upper Valley Creek	219	253	330	35	202	208	89
Upper Yankee Fork	112	250	234	53	67	143	57
Upper East Fork	51 1	614	622	174	468	478	370
Herd Creek	79	32	57	43	47	52	49
Marsh Creek Drainage	406	560	466	235	456	425	281
Lemhi River	819	804	589	360	371	589	407
North Fork Salmon	70	66	145	155*	95*	106	53*
Bear Valley Creek	534	445	574	356	334	449	108
Elk Creek	525	420	483	349	302	416	173
Sulphur Creek	142	134	142	138	93	130	58
Upper Big Creek	127	67	90	65	68	83	32
Subtotal	4,362	4,662	4,479	2,317	3,003	3,766	2,346
Summer Chinook							
Lower Salmon River	390	365	223	120	150	250	220
Lower Valley Creek	184	79	63	22	41	78	147
Lower East Fork	216	234	235	138	123	189	149
Loon Creek	49	96	135	110	43	87	79
South Fork Salmon River	980	854	515	636	527	702	421
Johnson Creek	110	286	127	273	130	185	183
Secesh River-Lake Cr.	140	140	58	104	63	101	80
Lower Big Creek	51	94	33	72	23	55	52
Subtotal	2,120	2,148	1,389	1,475	1,100	1,647	1,331
Unclassified Spawners							
Camas Creek	212	256	251	94	86	180	120
Lower Yankee Fork	132	65	23± 97	44	79	83	41
West Fk. Yankee Fk.	210	283	284	17	112	181	31
Middle Fork Salmon	91	30	31	15	62	46	14
				170	339	490	206
Subtotal	645	634	663	1/0	339	490	200
Total	7,127	7,444	6,531	3,962	4,442	5,903	3,883

^{*} This counting area was changed in 1969 and is not comparable to previous years.

Table 2. Clearwater River chinook salmon redd counts in stream sections used by chinook - Idaho, 1971.

Streams	 Number of Redds counted in:						
	 1966	1967	1968	1969	1970	Average	1971
Selway River	36	22	16	57	65	39	55
Bear Creek	8	7	7	6	19	9	14
Running Creek		- -	4	21	10	12	8
Whitecap Creek					4	4	
Crooked Fork*	 7	0	15	112	34	34	1
Total	51	29	42	196	132	98	78

^{*} Ground survey

Table 3. Length frequency distribution for spawned-out chinook salmon in stream areas believed to be used primarily by spring-run fish during 1971.

Fork							Big Cree	k	
Length	Bear Val	llev Cr.	Elk Cree	k	Sulphur	Cr.	(Upper)		
(inches)	Female	Male	Female	Male	Female	Male	Female	Male	
15	1 Cmarc	11410	101110110	1100					
10		3		1					
16		J		-					
17		,				1			
18		4				1 5			
19		3				٦	1		
20		3	,	_			, T		
21				1					
22 23									
23		$\frac{1}{14}$							
Subtotal		14				6	1		
24		1							
25	1			1					
26	1	7		1 2 2 5		1		1	
1 27	2	7	1	2		1			
o 28	- 6	13		5					
1 29	2	10	3	3					
30	6	14	J	4				1	
	1	14	1	·••					
31	$\frac{1}{19}$	<u>9</u> 61	$\frac{1}{5}$	17					
Subtotal	19	0 Τ	Ĵ	Ι,		2		_	
		2	,			1	2		
32	•	3	1 1 3 5			_	4		
33	3 8	2	Ţ				1		
34	8	1	3	•	1				
35	12	1		1	1				
36	16	5	10	1		4			
37	5	4	7	2	_	1	2		
37 38	12	4	1		1		3 1		
39	3	1	1			_	1		
40	2	9 2				1			
41	1	2		2					
42	1	1				1			
43									
44									
45									
46									
Subtotal	63	33	29	- 6		-4	$\frac{-7}{7}$		
Subtotat	03	33	23	U	-	•	·		
ODANID MOMAT	0.0	100	34	25	2	12	8	2	
GRAND TOTAL	82	108	34	4.3	۷.	1.4	J	-	

Table 3 (Continued)

Fork			Salmon		East For		Valley C				
Length	<u>Lemhi Ri</u>		(Upper		(Upper		(Upper		Marsh Cr		
(Inches)	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	
15											
16		1		2 ·				1			
17				1		1					
18		1		1		3				1	
19				2		1		2		4	
20				2				1			
21				4		1		1,		egre	
22				3		1		1.		•	
23				$\frac{8}{23}$			_	4			
Subtotal	0	2	0	23	0	7	0	10	0	5	
24			1	8			2	5			
25	2	1	3	5		1		5	3		
26	4	2		9		5	3	10	1	1	
. 27	15	3	5	13	3		4	7	3		
¹ 28	15	2	8	10	2	2	3	7	3	3	
29	8	6	9	7	3	3	3	4	10	1	
30	8	3	15	9	4	1	3	3	4		
31	4	3	5	8	6	3	_4	7	7	$\frac{2}{7}$	
Subtotal	<u>4</u> 56	$\frac{3}{20}$	$\frac{5}{46}$	<u>8</u> 69	$\frac{6}{18}$	$\frac{3}{15}$	22	48	31	7	
32	5	2	8	8	4	7	6	5	3	1	
33	3	1	7	8	9	4	11	1		2	
34	5	1	17	7	11	3	6	1	5	1	
35			6	1	7	2	7	3	6	2	
36	3	2	23	7	13	4	13	8	16	4	
37		1	19	3	22	7	4	2	6	4	
38		3	9	7	5	18	4	2	5	2	
39			3	3	1	4	2		1	3	
40			2	5		2	1	1	1	7	
41			•	Ą	2	6		2		6	
42				7				3			
43				2		2				1	-
44				1		2					
45											
46										1	
Subtotal	16	10	94	63	74	61	54	28	43	$\frac{1}{34}$	
Grand Total	72	32	140	155	92	83	76	86	74	46	

,

Table 4. Length frequency distribution for spawned-out chinook salmon in stream areas believed to be used primarily by summer-run fish during 1971.

Length (Inches) 14	<u>Johnso</u> Female						
14		Male	Female	Secesh R. Male	So. Fk. S Female	Male	
_ -							
15							
16		1				1	
17		1				1 2	
18		1		1		2	
19		6		1 2 4		11 4	
20		8		4		4	
21		7				18	
22		11				12	
23	1	1			1	4	
24	$\frac{1}{2}$	$\frac{3}{39}$		<u>-</u> _	$\frac{3}{4}$	4 3 57	
Subtotal	2	39		7	4	57	
25		5		1	3	1	
26	3	8		1	6	8	
27	4	12		9	5	16	
28	9	25	1	5	12	17	
29	18	36	1	4	26	26	
30	32	35	5	8	35	22	
31	17	19	6	5	24	16	
32	7	14	2	3	13	13	
33	$\frac{14}{104}$	$\frac{8}{162}$		$\frac{2}{38}$	$\frac{12}{136}$	8	
Subtotal	104	162	15	38	136	127	
34	20	10	1 4 3 1	1	12	9	
35	17	4	4		11	3	
36	10	3	3	2	19	2	
37	6	1	1		11	4	
38	2	2			2	1	
39	_				*		
40	1				1	1	
41						1	
42							
43							
44	56	20	- 9	-3	56	20	
Subtotal	٥٥	20	7	3	Jo	20	
GRAND TOTAL	162	221	24	48	196	204	

APPENDIX

LEGEND

Ground Survey Sections Aerial Survey Sections Ground Redd Counts Aerial Redd Counts Aerial-Ground Check Areas Aerial-Ground Check Area Count Migratory Block Road Trail Forest Service Stations Landing Strip XXXXX Fence Pack Bridge

Highway Bridge

DRAINAGE Salmon River SURVEY DATE 8-26, 9-1	1, 9-14, 9-15, 9-16
STREAM Salmon River MAP SCALE 1/4" = 1	
OBSERVATION CONDITIONS Good OBSERVER Yates, Smith,	Strain, Raymond
TIMING: Early On Time Late (mark one)	
REMARKS:	<u> </u>
Yankee Fork	
<u></u>	
Sunbeam Sunbeam	
Sumeam	
م منترس	
Valley Cr. 44	•
Upper Sunny Gulch Summers Stanley Sheep Bridge Springs	
Stanley Sheep Bridge Springs	
426	
Redfish Lake	
Bridge Sawtooth R.S.	•
Hell Roaring 74 (119) (Brecke	enridge Diversion
	Dam
Pettit Pole Lake Creek	
Count lower Lake Creek bridge to mouth	
50	
Beaver Creek	-

	DRAINAGESal	mon River	SURVEY DATE 9-11	
	STREAM Sal		MAP SCALE 1/6" = 1 mi	le
	OBSERVATION CON	DITIONS Good	OBSERVER <u>Yates</u>	
	TIMING: Early	On Time Late	(mark one)	
	REMARKS:			
			. 4	
		E	llis	
			Pahsimeroi River	
		10-;		
		: 3	Salmon River	
		<i>i</i>		
		!)	
		Challis) Prides	
		*	Bridge	
			1	
		-(30)	<i>.</i> ***	
			/	
) :	
,	Yankee	X	<i>y</i>	
	Fork	النتصر الما	June 1	
		(15)	3	
	المراجع المراج	الماسينين	East Fork Salmon River	
Sunbeam	المستنطق	Slate	Salmon River	
1	Warm Springs	Creek	للمعتتع	
	Creek	11	(

DRAINAGE Salmon River	SURVEY DATE 9-11
STREAM Salmon River	
OBSERVATION CONDITIONS Good	
TIMING: Early On Time Late	(mark one)
REMARKS:	
Salm	non
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. (
Salmon River	•
Parmon Kive	•
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<i>f</i> ;	
Ellis Pahsimeroi River	, , , , , , , , , , , , , , , , , , ,
	N
<i>[i,</i>	

DRAINAGE Salmon River	SURVEY DATE <u>8-25, 9-14</u>
STREAM Valley Creek	MAP SCALE 2/3" = 1 mile
OBSERVATION CONDITIONS Good	OBSERVER Raymond, Smith, Strain, Yates
TIMING: Early On Time Late	e (mark one)
REMARKS:	_
	Trap To Lowman
	Creek Valley Cr.
.	Valley Cr.
Elk Creek	المناسبة الم
	# -Bridge
Stanley	\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Lake Cr.	
Stanley Lake	78
	Stanley Creek
	Stanley Creek
Springs Summers	منتزنة
مستعم .	
	- 7
Iron Creek	
Stanley	
Salmon R.	
<i></i>	
To Ketchum	To Challis

	DRAINAGE	Salmo	n River	SURVEY DATE	8-19, 8	-30, 9-8	
	STREAM	Yanke	e Fork	MAP SCALE _	1/3" =	l mile	•
	OBSERVATI	ON COND	ITIONS Good	OBSERVER Da	rrington,	Smith, Cravens,	Yates
	TIMING:	Early	On Time Late	(mark one)			
	REMARKS:						
			·				
				,	i.		
				نننز)	Mac	kay	
				4	Cr	eek	
				1. 2.			
			Ten Mile Cr.	<i>l:</i>			
			~~~~,	•			
			E				
				- 172ma 1627a 2			
		Fight	Mile Cr.	Nine Mile (	Jr.		
		Eight		7			
		۸	Į.	Six Mile	Cr.		
	Jordan	n <b>\</b>		Pina Wile Co	_		
	Cree	ek (	4	Five Mile Cr	•		
Ligh	tning	<i>(</i> :.		·			
	Creek						
Ų	<b>*</b>	31)		•			
7		W. Fk	~ ' / /3	mey Cr.			
Deadw		ankee Fl	k. <b>3</b> (**)				
Cre	ek		V. x	Pole Flat For	est Cam	_ \	
		·	Y A	rote ride rot	ese cam		
			7		To Chal	lis	
			À	مونده ا		N	
		Cuni	beam	منعن		\	
		Buin	2				
		ئىز سە					
	To Stanle						

DRAINAGE	Salmon River	-	SURVEY DATE 8-	27, 9-1, 9-10, 9-11
STREAM	East Fork	<del></del>	MAP SCALE 1/6	" = 1 mile
OBSERVAT	TION CONDITIONS G	ood	OBSERVER Raymon	d, Smith, Strain, Yates
TIMING:	Early On Time	Late	(mark one)	
REMARKS			· · · · · · · · · · · · · · · · · · ·	
		·		
	<b>\{</b> :			
	<b>}</b> }			
Salm	on River			
-	J.	46)		
	Jimmy Smith	<b>S</b>		
Lake Cree	k (103)		erd Creek	
		49		
Boulder	¥3.5 mil below	1/1		
Creek	Boulder C	x.	Ranch	•
Little	/ 1/2	X		
Boulder / Creek	(370)	1 11	(spring/summer b 3.5 miles below	oundary is Boulder Cr.)
Germania				
Creek		^		
Bowery G.S.	A Y ±		\	
	اسم			
•				
	1			
			1	

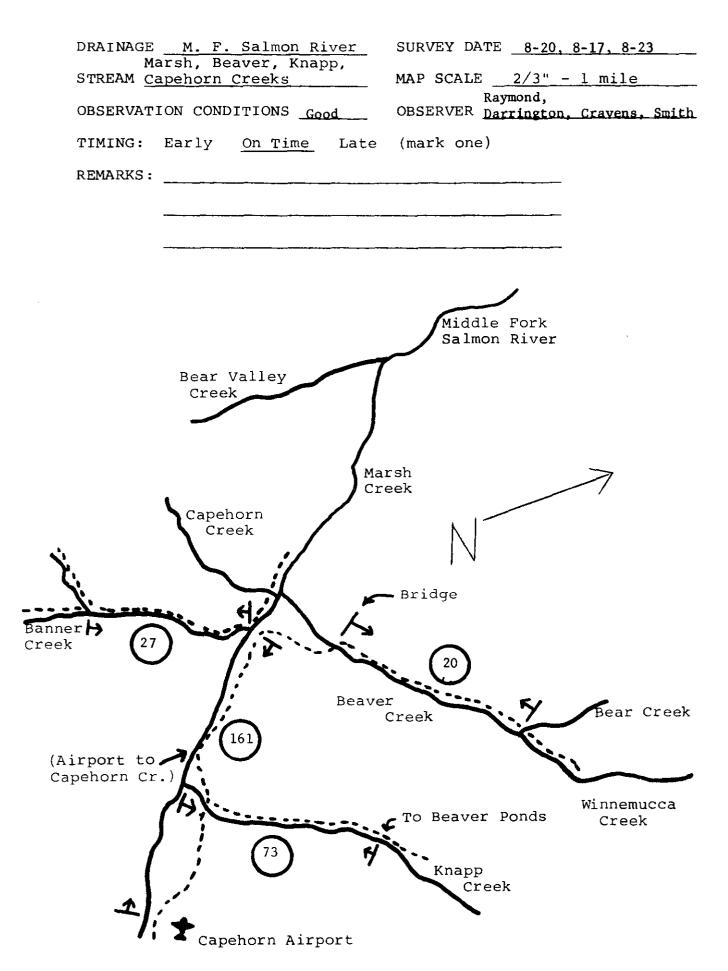
DRAINAGE Salmon River SURVEY DATE 9-13, 9-16, 9-17 STREAM Lemhi River MAP SCALE 1/6" = 1 mile OBSERVATION CONDITIONS Good OBSERVER Strain, Yates, Yowell TIMING: Early On Time Late (mark one) REMARKS: Salmon City Lemhi River almon River Tendoy Basin Creek Lemhi Bear Valley Creek Hayden Creek Maiers Lane Cottam Creek Lane Leadore

DRAINAGE Salmon River	SURVEY DATE 9-13
STREAM North Fork	MAP SCALE 1/2" = 1 mile
OBSERVATION CONDITIONS Good	OBSERVER <u>Carroll</u> , <u>Yates</u>
TIMING: Early On Time Late	(mark one)
To Montana	REMARKS:
	·
Twin Creeks	
	Dahlonega Creek
	Gibbonsville
<b>1)</b>	
North Fork	
Salmon River	
Hughes 40	
Creek	Sheep Creek
\	
l'a m	
null	Fork Ranger Station
Creek	
((	
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<i>V</i>	
<i>i</i>	
<b>i</b>	
North Fork	
To Shoup To Salmon	

_17_

DRAINAGE Salmon River	SURVEY DATE 9-6
STREAM M. F. Salmon River	MAP SCALE 1/4" = 1 mile
OBSERVATION CONDITIONS Good	
TIMING: Early On Time Lake	
REMARKS:	
	[
Big Creek	V3
	₹
	Middle Fork
	Salmon River
~	Je
Brus	h Creek
	<b>↑</b>
	<b>₹</b> ' `
	<b>&gt;</b>
	<i>ح</i> م
	}
	<b>/</b>
	Camas Creek
مر ا	
مرر	
ndian	
Creek	
-18-	

DRAINAGE Salmon River	SURVEY DATE 9-6
STREAM M. F. Salmon River	MAP SCALE 1/4" = 1 mile
OBSERVATION CONDITIONS Good	OBSERVER Yates
TIMING: Early On Time Late	(mark one)
	REMARKS:
Indian Creek	
Pistol Creek	7
ا	<b>/</b>
<u>(</u>	Middle Fork Salmon River
_ /	Salmon River
North	
Fork 2	}
<i></i>	
Sulphur d‡	
Creek	
(	
	N
Bear Valley	1 \
Creek	
Marsh Creek	ς
ſ	
Lolo Creek	



Ground Count Corduroy Meadows on 8/23/71

DRAINAGE M. F. Salmon River	SURVEY DATE Aerial Count 8/26/71
STREAM Elk Creek	MAP SCALE 1" = 2 miles
OBSERVATION CONDITIONS Excellent	OBSERVER Welsh
TIMING: Early On Time Late	
REMARKS:	
	······································
7111	
West of N. F. Elk	Creek
O.P.A.	
\(\(\varP\)	
No.	
Porter Cr. 72	
	\(\frac{1}{2}\)
Beaver	, '
Cr.	<b>.</b>
To Cascade Elk Creek	
Cascade 10	J H
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	& J. C.
· · · · · · · · · · · · · · · · · · ·	
, ki	\$0 ¹ ,'
Bearskin	*//:
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0 1 2 3 4	Ň

DRAINAGE _M. F. Salmon River	SURVEY DATE	8/26/71
STREAM Bear Valley Creek	MAP SCALE 1"	= 2 miles
OBSERVATION CONDITIONS Good	OBSERVER	Welsh
TIMING: Early On Time L	ate (mark one)	
area from the bridge at holding pond weir site. in the same section. T	the mouth of Elk Creek On the aerial count, he stream section from entirely overlayered wi	downstream to the lower 44 redds were counted Porter Bros. Dredges
Elk Creek	Bear Valley Creek	H. F. Salmon River
	Tote Creek	Fir Creek
Sack Sack	<b>\</b> *	
cache Creek		
Porter Bros. Dredges	1 2 3 4	N

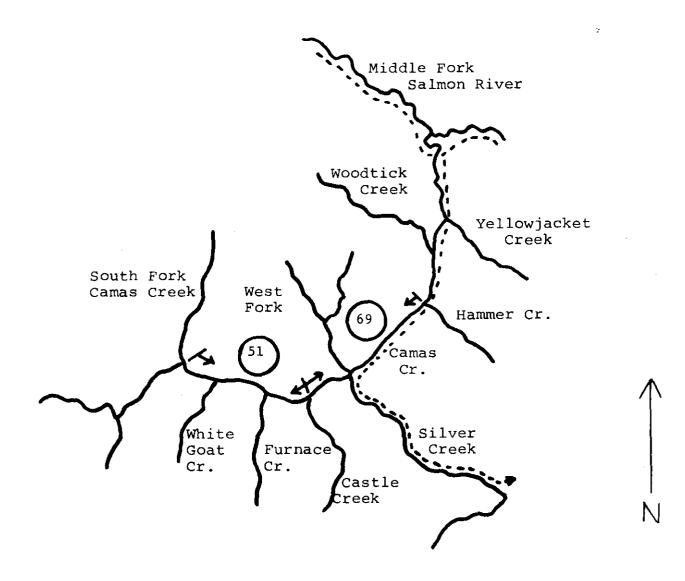
-22-

DRAINAGE M. F. Salmon River SURVEY DATE 8/20/71 STREAM Sulphur Creek MAP SCALE 1/6" = 1 mile OBSERVATION CONDITIONS Good OBSERVER Welsh TIMING: Early On Time Late (mark one) REMARKS: Previous counts indicate trend area represents about 50 per cent of total number of redds in Sulphur Creek. North Fork Upper Bluemoon Ranch Creek Boundary (Trend count area is from the upper ranch downstream approximately 3 stream miles to the point where the stream meanders over to the hillside on the north edge of the meadow.)

DRAINAGE	Middle F	Fork Salmon	River	SURVEY DATE	9-13
STREAM _	Loon Cre	eek		MAP SCALE 1	/3" = 1 mile
OBSERVĄT	TION CONDIT	TIONS Good		OBSERVER Ya	tes, Strain
TIMING:	Early	On Time	Late (	mark one)	
Middle Fk. Salmon R.	Steep Canyo	ne Creek	REMARK	k Cr.	
Creek		Indian Creek		ottonwood Cr.	
	Grou Cr Trail Cr	53 Boy	yle Ranch		
	Canyon Cr.	STEEP Canyon	on Creek	G. S.	Ν

-24-

DRAINAGE	<u>M. F.</u>	Salmon Rive	<u> </u>	SURVEY DATE 8-18, 9-9
STREAM	Camas	Creek		MAP SCALE 1/4" = 1 mile
OBSERVATI	ON COND	ITIONS Good	·	OBSERVER Smith, Cravens, Strain, Darrington
TIMING:	Early	On Time	Late	(mark one)
REMARKS:	<del></del>			
	<del></del>			· <del></del>



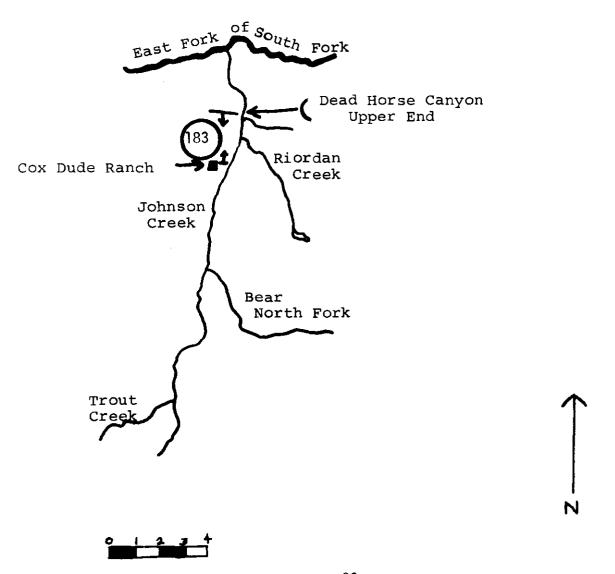
Ground Count Upper area 8/24/71

DRAINAGE M. F. Salmon River SUR	RVEY DATE Aerial count lower area 9/10/71
STREAM Big Creek MAF	SCALE 1" = 4 miles
OBSERVATION CONDITIONS Good OBS	SERVER Welsh
TIMING: Early On Time Late (mar	rk one)
(Lower) 32  (Lower) 2  Monumental Creek  (Lower) 50	Crooked Creek  Cabin Creek

Aefial Count 9/14/71 Stolle ground count 8/27/71 DRAINAGE _ Salmon River SURVEY DATE MAP SCALE 1/4" - 1 mile STREAM S. F. Salmon River Good Welsh OBSERVATION CONDITIONS OBSERVER TIMING: Early On Time Late (mark one) South For! Monte Richards was unable to G.S. REMARKS: schedule the South Fork aerial Secesh count for 1971. Tom Welsh To Cascade conducted the count and ground River count checks indicate the aerial Creek count is low. Un Poverty Flat, 143 redds were ground counted, as compared to 75 from the air. \McCall Bridge-East Fork of South Fork _> To Yellowpine Salmon Krassel R.S. River Indian Creek Landing Field Swimming Hole Brown's Airfield Poverty Flat G.S. ← Pack Bridge To Warren Warm Lake G.S. To Stanley Warm Lake Stolle Meadows G.S. 5/27/71 Blue Point Cr.

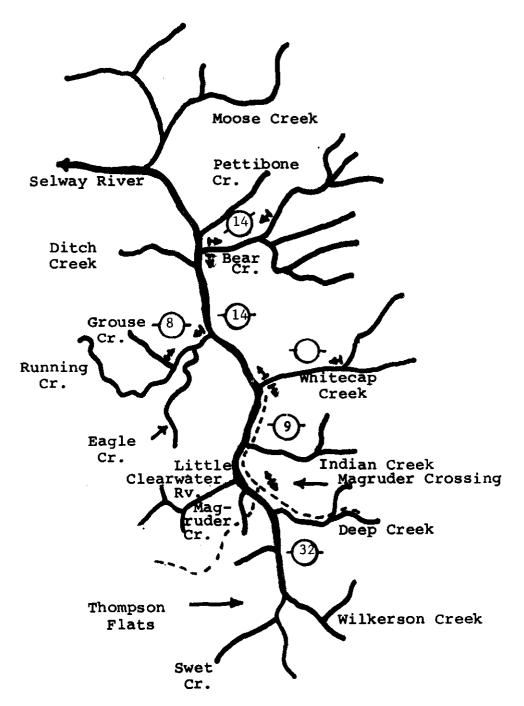
-27-

DRAINAGE	E. F. of South Fork	SURVEY DATE 9/13/71
STREAM _	Johnson Creek	MAP SCALE <u>l" = 4 miles</u>
OBSERVAT	ON CONDITIONS Good	OBSERVER Welsh
TIMING:	Early On Time Late	(mark one)
REMARKS:	On 9/9/71, Don Park co	unted 182 redds in
	the same section	

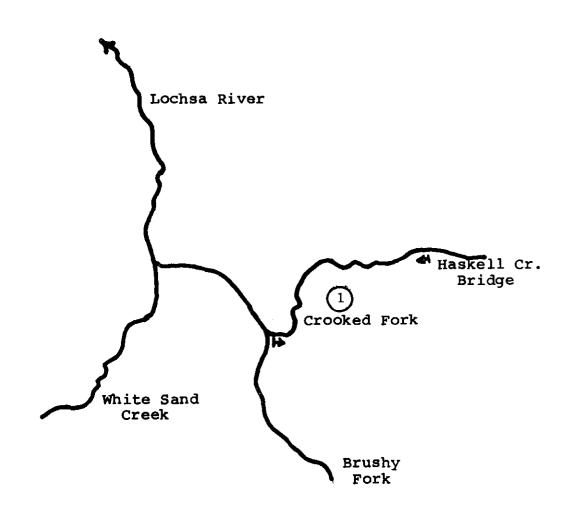


DRAINAGE S. F. Salmon River SURVEY DATE 9/7/71
STREAM Secesh and Lake Creek MAP SCALE 1" = 4 miles
OBSERVATION CONDITIONS Good OBSERVER Welsh
TIMING: Early On Time Late (mark one)
REMARKS: Counting procedure has varied considerably on the Secesh River.  The river was counted from the air until 1964. In 1964 the
river was ground counted from Warm Springs Creek to the campground at the end of the road. The entire river was again aerially counted in 1965. From 1966 on, a ground count was made from Warm Springs Creek to Long Gulch Bridge on Secesh Meadow. In 1971, the entire meadows area was ground counted. Fifty-eight redds were counted from Warm Springs Creek to Long Gulch Bridge and 51 redds were counted from Long Gulch Bridge to the campground at the end of the road. For comparison purposes, warm the ground counts from 1966-1971 should Spring be increased by 47 per cent.
Creek Creek  Creek  Long Gulch Bridge
Loon Lake  Blue
Loon Creek Enos Creek
Lick Creek
0_1234 N

DRAINAGE <u>Selway River</u>	SURVEY DATE 9-7-71
STREAM As noted	MAP SCALE 1/8" = 1 mile
OBSERVATION CONDITIONS Good	OBSERVER Holubetz, Hoss
TIMING: Early <u>On Time</u>	Late (mark one)
REMARKS:	



DRAINAGE	NAGE Lochsa River  AM Crooked Fork		SURVEY DATE 8-30  MAP SCALE 1/4" = 1 mile	
STREAM _				
OBSERVAT	ION CONDITIONS	Good	OBSERVER Hoss	
TIMING:	Early	On Time	Late (mark one)	
REMARKS:		····		
	·			



Submitted by:

Terry Holubetz Regional Fishery Biologist

Steven A. Hoss Fishery Biologist

Thomas L. Welsh Regional Fishery Biologist

Donald R. Corley Regional Fishery Biologist

# Approved by:

IDAHO FISH AND GAME DEPARTMENT

James C. Simpson, Chilef Fisheries Division

Vernon B. Rich, Coordinator

IDAHO FEDERAL AID